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DATE 15-7-82	JOB NUMBER 7002
DRAWN	SCALE : NONE
DRAWING NUMBER FP-2	

**CANTOR, FITZGERALD SECURITIES CORP.**  
ONE WORLD TRADE CENTER NEW YORK, N.Y.

PROJECT TITLE	NEW COMPUTER ROOM - 2
FLOOR	104TH
DRAWING TITLE	HALON & SPRINKLER SPECIFICATIONS

RECEIVED TAA NO. 232 /  
DATE APPROVED 2/2/82

Substitution of components permitted to be signed to Special Specification 11.1.1. The design shall be considered only when the following requirements have been met:

- a. A complete list of such substituted components, with 3 copies, including drawings thereof, shall be submitted to and be approved by the architect and/or consulting engineer, not less than 10 calendar days prior to the scheduled date for opening of bids.
- b. The contractor shall furnish satisfactory manufacturer's proof that the substituted products are, in fact, equal or superior in quality and performance to those described in the original specifications. Such evidence shall be submitted to the architect and engineer not less than 10 calendar days prior to the scheduled date for opening of bids.

The Nation 1301 Fire Suppression System shall include a detection subsystem with provision for both pre-alarm and automatic agent release.

- a. Pre-alarm shall be accomplished by smoke detectors.
- b. Automatic agent release shall be accomplished by "cross-zoned" smoke detectors. "Cross-zoned" smoke detection refers not to the use of two separate detector loops or circuits within the same zone, but to the use of two different types of detectors within the same zone. That is, one "cross-zoned" smoke detector must react to the presence of smoke before the extinguishing system can be actuated. This "Cross-zoned" circuiting minimizes unnecessary agent releases. "Alarm only" and "test" detectors are not acceptable. Detector spacing shall be in accordance with NFPA Std. 72.

- a. Product or combustion detectors shall be dual chamber, ionization type as manufactured by "Pyrotech" or equal.
- b. The unit shall be listed by UL, ULC, and FM approved as a signal and release device. Unit shall be installed and field indicated by the manufacturer's representative.
- c. Smoke detectors shall be equipped with air shields.
2. Halon Alarm Panel: (Fully Recessed)
  - a. The Halon alarm panels as manufactured by "Pyrotech" or equal shall contain the following:
6. It is required that the GENERAL CONTRACTOR be responsible for sealing the floor and wall openings to minimize the leakage of HALON gas.
7. All Halon system components shall be labeled as to BSA approval.
8. All Halon wiring shall have teflon insulation.

D. ALLEGATION WORK

1. Under no circumstances will this Contractor or his workmen be permitted to use any part of the building as a shop, except parts designated by the resident Port Authority Architect for such purposes.
2. Unnecessary noise shall be avoided at all times and necessary noise shall be reduced to a minimum.

- E. SPRINKLER HEADS
  1. The Contractor shall furnish and install all new sprinkler heads. The Contractor shall submit a list of the make and design that has received the approval of the Resident Port Authority Architect.
  2. All pendant type sprinkler heads (to finished hung ceiling areas) shall be of the type "Standard" by Sprinkler Co. Model "GI" Flush-type, chrome and brass finish with "I" Office "GI".
  3. All upright type sprinkler heads (to unfinished, no hung ceiling areas) shall be of the type "Standard" by Sprinkler Co. Model "U" rough brass type with "I" Office.
  4. The temperature rating for sprinkler heads shall be 650°.
  5. In addition to the heads actually required, this Contractor shall furnish a minimum of six heads of each type and temperature rating for use as a spare. The Contractor shall submit a list of the make and design that has received the approval of the Resident Port Authority Architect.
- F. PIPPING AND FITTINGS
  1. Sprinkler pipping shall be schedule 40 black steel with malleable

iron screened fittings, 150 lb.

PIPE HANGERS

1. All horizontal piping shall be supported with adjustable, clevis type pipe hangers. Hangers, installation standards of Sec. 3-15, NFPA 13, etc., shall conform to the requirements of these specifications.

TESTS

1. The tenant's sprinkler installation shall be tested before being connected to the existing sprinkler mains. Test procedures shall be as directed by the Resident Port Authority Architect; test results shall meet with his approval.
2. All piping to be concealed shall be tested before pipe enclosures are completed.
3. All tests shall be made in the presence of the Resident Port Authority Architect. The Contractor shall notify them in advance of his readiness for the tests.
4. This Contractor shall continue to be responsible for the tightness of the installation until its final acceptance, regardless of the results of the tests.

1. CO-OPERATION  
1. This Contractor shall give the general Contractor full co-operation and shall co-operate with the plumbing, heating and ventilating and Electrical Contractors as to space conditions, so as not to interfere with each other's work.

2. QUALITY OF MATERIAL  
1. All material and equipment furnished and installed shall be new and shall be of the best quality of the kind specified.

3. DETAILS  
1. Auxiliary drains shall be installed at all low points in the system. Installation shall be in accordance with the requirements of Sec. 3-11, WPMG. All pressure and gravity drains shall split to safe place.

4. EQUIPMENTS  
1. Waste pipes pass through floors, ceilings or wall. There shall be installed adjustable connections of approved \_\_\_\_\_ and made \_\_\_\_\_ The \_\_\_\_\_ shall be \_\_\_\_\_ stainless steel or satin finish chrome plated steel for finished \_\_\_\_\_

5. STAINLESS STEEL

6. DATE APPROVED

7. DATE APPROVED

- a. Piping
  - 1) All Hylon piping shall be standard weight galvanized steel pipe and galvanized malleable iron flanged fittings, screw type.
5. HALCON SYSTEM PIPING, FITTINGS AND VALVES
  5. Equipment and accessories furnished by the contractor shall be standard components of a specified manufacturer. Sections of model designations, operating characteristics, all equipment listed by Underwriter's Laboratories or approved by Factory Mutual Corporation.

2. **VALUES SHALL BE EXPRESSED** in accordance with the units and all requirements of U.S.P.A. No. 124.

2. Appraisals: Prepare all required documents, drawings and perform all required tests and pay all required charges.
3. Drawings are diagrammatic and indicate general arrangement of work.
4. Contractor shall be held to have examined the site and work conditions and to have accepted the conditions of the contract. Compensation will be allowed for conditions found during the course of the contract.
5. Contractor shall coordinate his work with all other trades.
6. Contractor shall verify all measurements at site and be responsible for correctness of same.
7. All work shall be installed readily accessible for operation, maintenance and repairs.
8. All work and equipment to be fully warranted one (1) year from the date of final payment and acceptance.
9. All cutting and patching in connection with this trade shall be done by this Contractor.
10. Investigate each space through which equipment must be moved.

11. Store materials in spaces designated by owner.
12. Remove rubbish from premises as often as necessary or directed.
13. Equipment intended for permanent installation shall not be operated for temporary purpose.
14. All work and equipment shall be cleaned to the satisfaction of the Resident Port Authority Architect before turning over to the owner.
15. Shop drawings shall be submitted for approval prior to ordering and installation of same. Four copies of each submittal are required. Manufacturer's standard specification shall apply to all units specified.
16. Painting: Pipe hangers primed with zinc chromate, iron work installed by this contractor, two (2) coats of red lead and oil prime.

8. **WORK INCLUDED**

1. This specification is not intended to be a complete itemization of the work to be performed. It is intended to be a complete

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18. All equipment to be start-up and checked-out by contractor with assistance of firm manufacturer's personnel.
8. WORK INCLUDED
  1. This specification is not intended to be a complete itemization of the halon system work required, but is for the guidance of this contractor in estimating his work. All work properly belonging to and to be performed under halon system work is included in this contract.
  2. It is intended that all items of material and equipment mentioned hereafter shall be read as if the words "furnish and install" it is intended that this Contractor shall furnish all labor and devices required to meet such items to the halon system. The scope of work shall include following:
    - a. Halon 1301 Cylinder Bank Storage.
    - b. All Control Equipment.
    - c. All Auxiliary Equipment.
    - d. Pipe and Fittings.
    - e. All Electrical Wiring.
    - f. System Test.
9. WORK EXCLUDED
  1. Electrical service to new system control panel.
  2. Interconnection between new control panel and fire alarm control panel.
10. INTENT OF SPECIFICATIONS AND DRAWINGS

This specification is not intended to describe, nor the drawings to detail, the various items of equipment, or the connections therebetween, (accessories shall, as part of the contract, furnish and install equipment, connectors, supports, pipe connections, fittings, etc., the

2. Any item of work described in this specification, but not shown on the drawings, or necessary for the proper operation of the equipment, shall be complete and ready for proper operation.
- f. The control unit shall be solid state electronics employing plug-in circuit modules for the design of 120 volts AC, 50-60 hertz. Power consumption shall be 10 watts steady state with a peak of 200 watts. Provisions shall be made for operation from a self-contained 24 volts DC emergency power supply. The units shall be mounted on a rack with a variable All battery re-

9. The control unit shall have an adjustable distance time delay circuit which will allow the hold button to be depressed for a period of time allowing for evacuation of personnel or use of the hold and investigate station.
- a. The hold and investigate station shall be mounted within the protected area. Pressing of the hold button shall interrupt the alarm if, after the hold button has been pressed, the alarm is still sounding.

4. Extinguishing Sub-Systems
  - a. The system shall be designed to provide a six percent (6%) volume concentration of extinguishing agent with discharge time not to exceed 10 seconds. The system shall be capable of meeting Standard 12b, Performance 12b. Extinguishing sub-system shall include the following components:
    - Agent Storage Container
    - Discharge Nozzle
    - Nozzle Diffuser
    - Initiator Assembly
    - Halon 1301
  - b. Agent storage container shall include a 0-600 psig pressure gauge. The container shall conform to all applicable specifications as

promulgated by the Department of Transportation, and the Department of Commerce. The container shall be constructed in accordance with the Department of Transportation regulations for the transport of compressed gases. The container shall be designed to allow between 850 and 1000 psi in the event of excessive pressure buildup. Filled containers shall be super-pressurized with dry nitrogen to 360 psig at 70°F to allow for agent distribution, particularly in the event of a fire. The container shall be equipped with a discharge end of the container shall be provided with a female 2 inch (2") pipe thread. Devices and connecting electrical leads shall be completely supervised.

# WALTON 1201 SYSTEM

GENERAL

1. Materials: New, unused, best of their respective kinds and free from defects. Basis of quality shall be latest standards of ASTM, AIA, Federal Specifications, or other acceptable standards.
2. Approvals: Prepare all required documents, drawings, and perform all required tests and pay all required charges.
3. Drawings are diagrammatic and indicate general arrangement of work.
4. Contractor shall be held to have examined the site for its work before starting. If the site requires additional compensation will be allowed for conditions found during the course of the contract.
5. Contractor shall coordinate his work with all other trades.
6. Contractor shall verify all measurements at site and be responsible for correctness of same.
7. All work shall be installed readily accessible for operation, maintenance and repairs.
8. All work and equipment to be fully guaranteed for one (1) year from the date of final payment and acceptance.
9. All cutting and patching in connection with this trade shall be done this Contractor.
10. Investigations each space through which equipment must be moved, where necessary equipment shall be shipped in sections for moving through restricted space available.
11. Store materials in spaces designated by owner.
12. Remove rubbish from premises as often as necessary or directed.
13. Equipment intended for permanent installation shall not be operated f

16. All work and equipment shall be cleaned to the satisfaction of the owner before turning over to the owner.
15. Shop drawings shall be submitted for approval prior to ordering and installation of same. Four copies of each submittal are required. The contractor's standard specification shall apply to all units specified.
16. The contractor shall make arrangements with the owner prior to any shipments of the operating systems.
17. Painting: Pipe hangers, painted with zinc chromate, iron work, masonry contractor, two (2) coats of red lead and oil prime.

1)	Door Trip.
2)	Manual Pull Station.
3)	Audio-Visual Warning Signals.

3. **Nation Control Panel** (Fully Recessed)
  - 4) **Audio-Visual Nation Discharge Signal**.
  - a. The multi-ton electrical control panel, as manufactured by "Department of Defense," is capable of transmitting from smoke detectors or manual pull stations to provide pre-alarm or release of agent required. It shall also provide the power to operate the extinguishing sub-system and perform such other necessary functions as may be required.
  - b. The control unit shall be housed in a recessed, sheetmetal enclosure with a hinged door. The enclosure shall be constructed of fire-rated steel cabinet with hinged "knock out" doors. Knockouts shall be provided for external wiring in accordance with standard electrical practices.

- c. When operation of the detector, the unit shall provide power for operation of the extinguisher sub-system; cause an audible and visual alarm to activate and energize auxiliary relays for remote alarm or equipment shutdown. The unit shall be capable of providing supervision of the following functions:
  - 1) Close normally open dampers.
  - 2) Shutdown AC units 1 and 2.
  - 3) Shutdown computer equipment.
  - 4) Perform all functions for the alarm alarm panels.
  - 5) Provide facilities for tie-in connection to the existing fire alarm system.
  - 6) Time delay relays for purge fan.
  - 7) Detection circuits.
  - 8) Input power.

- d. Wiring from Halon control panel to the equipment of items no. 1, 2, 3, 4, 5, 6, 7 and 9 shall be by the electrical contractor.
- e. The necessary indicator lamps and control switches shall be mounted on the equipment of items no. 1, 2, 3, 4, 5, 6, 7 and 9, and on the control panel of door. The indicator/control panel shall be of a dead front configuration in compliance with GSM regulations; the back plate behind the control boards shall be painted orange to signify "live conditions in this area".

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